EXHIBIT NO. 1

16
4-8-03

City of Alexandria, Virginia

MEMORANDUM

DATE: APRIL 3, 2003

TO: THE HONORABLE MAYOR AND MEMBERS OF CITY COUNCIL

FROM: PHILIP SUNDERLAND, CITY MANAGER PS

SUBJECT: CONSIDERATION OF A COST-SHARING PROGRAM FOR BACK-FLOW PREVENTORS FOR THE FOUR MILE RUN AND COMMONWEALTH SEWER SERVICE AREAS

ISSUE: City Council consideration of a cost-sharing program for the installation of back-flow preventors for areas within the Four Mile Run and Commonwealth sewer service areas.

RECOMMENDATIONS: That City Council:

(1) Approve the cost-sharing program for the installation of back-flow preventors as described below; and

(2) Authorize the City Manager to take the steps necessary and desirable to implement the program.

BACKGROUND: Many homes in Alexandria, particularly near Commonwealth Avenue, incurred damages due to sewer backups and flooded basements during the weekend of February 22, 2003. Because of these snow and rain caused events and the related high water table due to snow and rain that fell this winter, parts of the City's sanitary sewer system along Commonwealth Avenue were overwhelmed. As an example of the demands put on the wastewater treatment system, the Alexandria Sanitation Authority processed sewage at a rate in excess of 120 million gallons a day on Saturday, February 22, compared to its normal rate of 45 million gallons per day.

Due to the aging of the City's sanitary sewer system, problems occur with the infiltration of ground water and the inflow of storm water into the pipes. The infiltration of ground water occurs as a result of leaks in the sewer pipes themselves, which allow the entry of nearby groundwater. The inflow of storm water comes from roof down spouts, driveway drains and groundwater sump pumps that are connected directly to the sanitary sewer system.

Normally, infiltration and inflow do not cause a problem. However, given the large amount of water from melting snow and rain on February 22, very substantial amounts of water entered parts of the sewer system, causing the large sewer line in Commonwealth Avenue to become overloaded. When this occurred, material in that pipe, and in the pipes that feed into it, began to

back up, which resulted in backups in the sewer laterals that normally carry wastewater from homes to the main sewer line in the street, and eventually backups into the basements of homes.

The City is currently undertaking a project to minimize inflow and infiltration (I&I) from the City's sanitary sewer system in the Four Mile Run and Commonwealth sanitary sewer service areas (Attachment 1), which is where the backups occurred. Data collection is already under way, and construction contracts are expected to be awarded in late 2003. $12.0 million has been budgeted, in the Proposed CIP, in FY 2003 and FY 2004 for this work. The work will include repairs to about 100,000 feet of sewer pipe and about 2,000 manholes in these two sewer service areas. This work is estimated to be completed near the end of 2006. As the work is completed, further monitoring of the system will be performed to determine if additional repair work will be necessary. However, the initial inflow and infiltration construction work is expected to remove much of the water now leaking into the sewer system.

DISCUSSION: Staff is proposing a cost assistance program which will reimburse eligible residential, commercial and other property owners for a share of the costs they incur in purchasing and installing a "back flow preventor" (also known as a backwater valve, or a check valve). This is a device that can be placed in the lateral pipe that runs from a home or other building to the City sewer line. While not a guaranteed fix, back flow preventors are designed to prevent material in a sewer line from "back flowing" into homes if properly maintained. These devices are available from local plumbing companies. The cost for a device and its installation will likely vary from about $1,000 to $2,000, depending on the type of device and the complexity of installation (such as the configuration of the sewer lateral and the difficulty in accessing the lateral). The homes and other structures within the designated impact area are of varying types and generally range from 30 to 100 years old. It should be noted that, in addition to the cost of the backflow preventor's installation, a plumber may discover deficiencies in a sewer lateral itself that may require additional costs to be incurred by the property owner.

Under the proposed program, City funds would be available for a portion of the cost of a backflow preventor installed on a property located in the area of the City that is subject to sewer backups. Staff has identified this impacted area in the Four Mile Run and Commonwealth sewer service areas (Attachment 2). The map of this impacted area was developed by hydraulic modeling of the sewer service areas and was supplemented by historical data of sewer backups in the sewer service areas.

The proposed program would provide reimbursement of fifty percent of the actual cost incurred by an eligible property owner, in purchasing and installing a backflow preventor, up to a maximum of $500. Property owners within the designated impacted area would be eligible for the reimbursement if they submit an application for reimbursement within six months of the program's start up date this spring. The applicants must have a basement (finished or unfinished), must have installed a backflow preventor after February 22, 2003, must certify that installation has been performed by a City-licensed plumber and that payment has been made in full, must allow the City to verify installation on site, and must execute an agreement releasing the City from any liability for future damage arising out of the backflow preventor.

Exceptions to these program guidelines may be granted for good cause at the discretion of the Director of Transportation & Environmental Services. Such exceptions may apply to property owners outside of the designated impacted area who can demonstrate that their basement suffered back-up on February 22. Special consideration may be granted to residential properties having more than one sanitary sewer connection. Special consideration, on a case by case basis, will be granted to residential property owners who participate in the City's Real Estate Tax Relief Program for Elderly or Permanently and Totally Disabled Persons. If necessary, the program duration may be extended by the City Manager if it appears that six months is not a reasonable amount of time for the installation of the back flow preventors due, for example, to increased demand for plumbing services. In no event, however, may the program exceed one year. Property owners within the designated impacted area who have installed a back-flow preventor after February 22, but before the program implementation, will be eligible for reimbursement. Owners who installed a preventor before February 22 are not eligible.

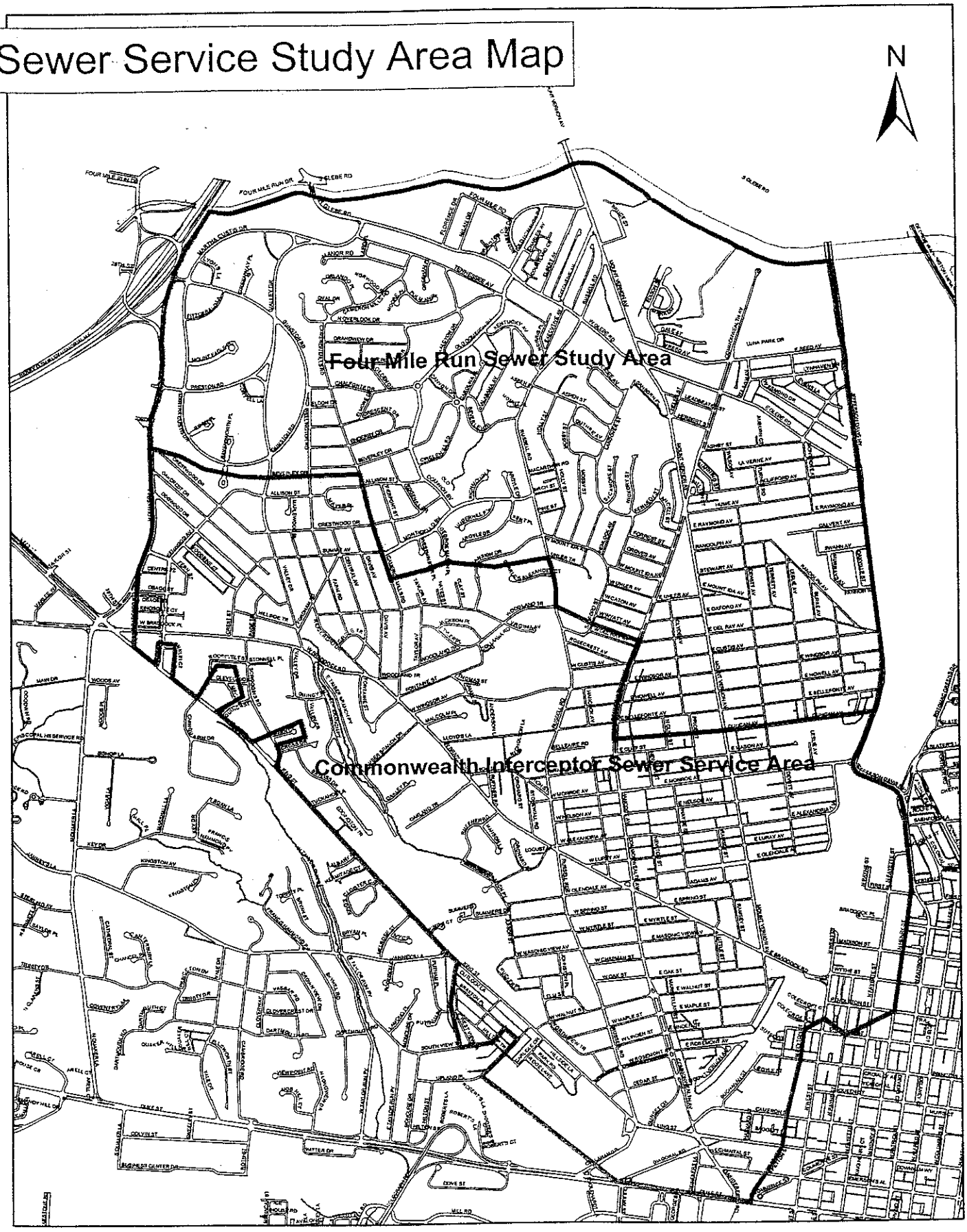
A proposed program informational brochure and application are attached to this memo (Attachment 3). This brochure and application will be mailed to all of the properties within the designated impacted area prior to implementation of the program. This program will also be advertised on the City's website and on the City's cable access channel. In addition, staff will work with the citizen associations within the affected area to help spread the word to all properties. To date, informational and public information pieces and letters have been provided to the neighborhoods.

FISCAL IMPACT: Staff estimates that there are about 2,300 dwellings within the designated impact area. Based on field observations during the data collection phase of the I&I program, it is estimated that about two-thirds of those dwellings contain basements (approximately 1,530). If all of those properties choose to participate in this program, at a cost of $500 per property, the cost to the City would be $766,500. If 50% of the property owners with basements choose to participate, the cost would be $383,250; if 25% choose to participate, the cost would be $191,625. The funding for this program will come from the I&I rehabilitation capital project, which is reflected in the proposed FY2004-2009 CIP.

ATTACHMENTS:
Attachment 1. Four Mile Run and Commonwealth sanitary sewer service area map.
Attachment 2. Back-flow Preventors Program Area Map.
Attachment 3. Proposed Reimbursement Cost-Sharing Program application materials.

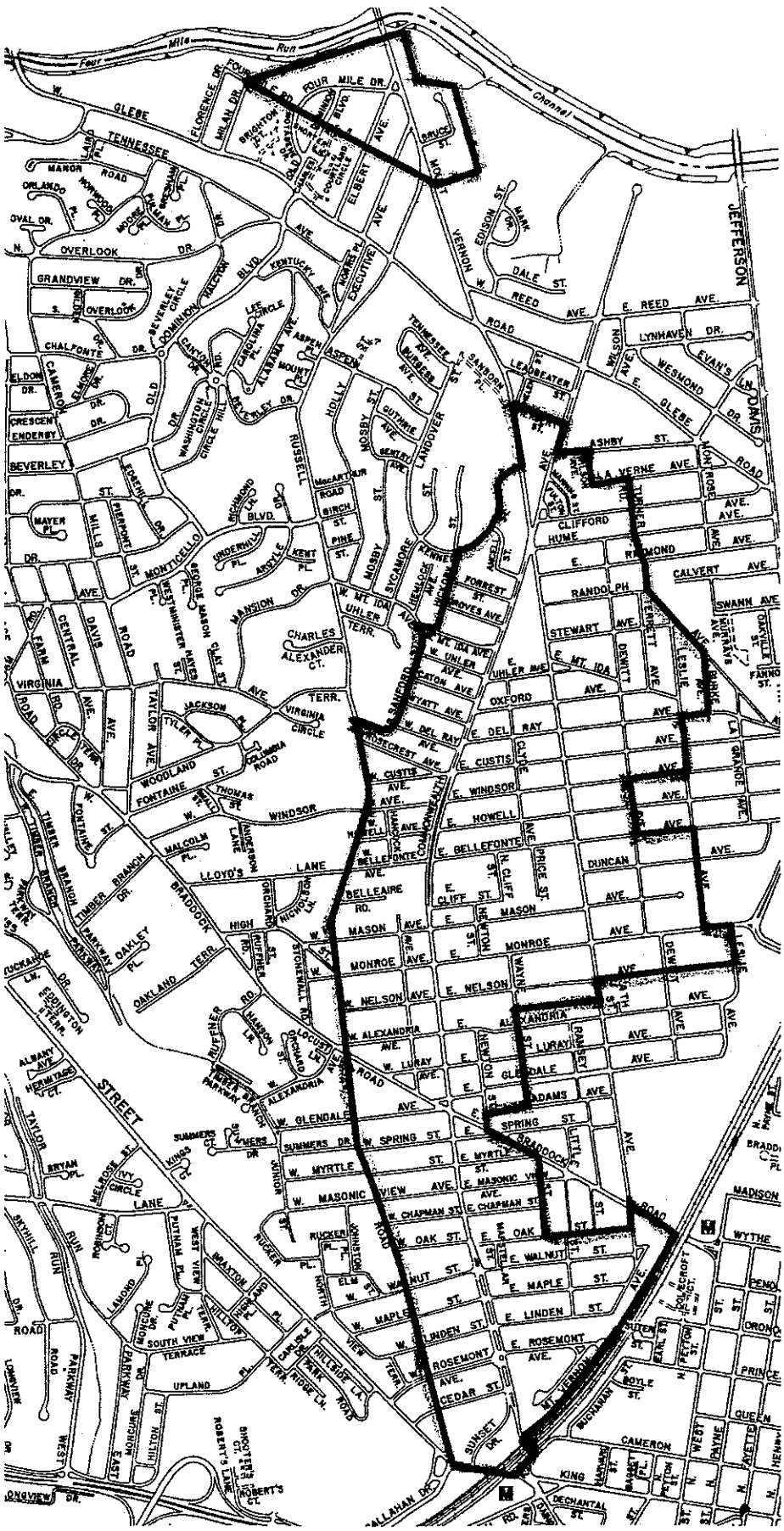
STAFF:
Richard J. Baier, P.E., Director, T&ES
Emily A. Baker, P.E., City Engineer, T&ES

Sewer Service Study Area Map



For more information visit our web site at
www.ci.alexandria.va.us/tes/ed/stormwater_infiltration_inflow_program

Attachment 2



City of Alexandria, VA Backflow Preventer (BFP) Assistance Program

DESIGNATED AREA MAP

Boundary of area designated to be eligible for BFP reimbursement program

Return Address

Postage

Mailing Label

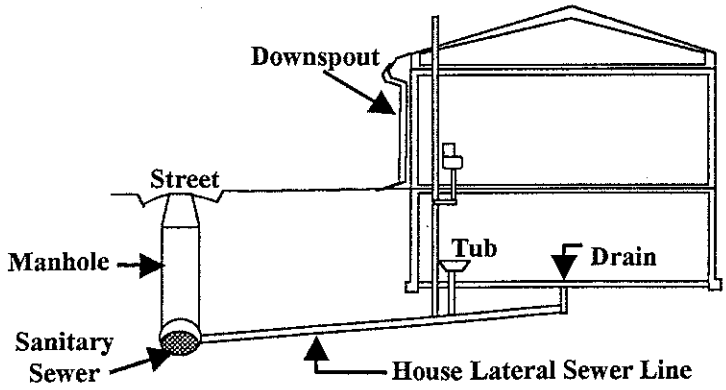
Alexandria's Program to Assist Homes & Businesses to Protect Against Basement Back-Ups

If you have a home or business that is located in the areas shown on the enclosed map, you may have experienced a basement back-up during heavy rainfall or during a combination of rainfall and snow melt.

BACKGROUND: Areas in the City along Commonwealth Avenue and around Bruce Street near Four Mile Run sometimes experience basement back-ups or flooding.

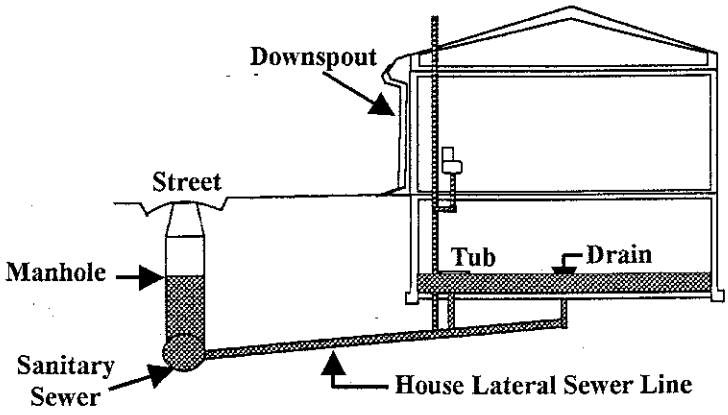
This situation can occur when water from a heavy or intense rain gets into the sanitary sewer system. The sanitary sewer system is a network of pipes and manholes in City streets that collects wastewater from homes and businesses. The wastewater collected, is transported for treatment to the plant operated by the Alexandria Sanitation Authority. The plant is located along the beltway at the foot of Payne Street. Homes and businesses are connected to the sanitary sewer by a house sanitary sewer also called a house lateral or lateral sewer.

Rainwater can enter street and house sewers through cracked pipe or leaky joints and manholes. Sometimes homes and businesses connect sump pumps and roof downspouts to the sanitary sewers – these connections are not allowed and discharge unwanted water to the sanitary sewers during rain events.



Street Sewer & House Lateral

Alexandria's Program to Assist Homes & Businesses to Protect Against Basement Back-Ups



A Basement Back-Up

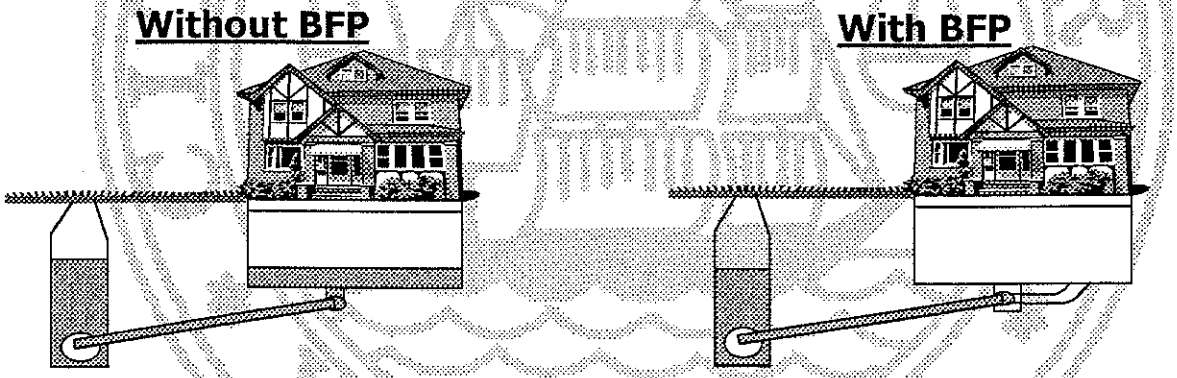
If the amount of rainwater entering the sanitary sewers gets to be excessive, the street sewers become overloaded and can back-up into the basements of homes and businesses.

CORRECTING THE PROBLEM: The City has a repair program underway to fix the leaky and broken sewers in the streets and find connections that are not allowed. This repair program will take several years to complete and may require follow-on work before the sources of rainwater are sufficiently eliminated.

PROTECTION FOR YOUR HOME OR BUSINESS: In the meantime, modification to the internal plumbing within a home or business can provide a measure of protection against basement back-ups.

A common protective device called a backflow preventer (BFP) can be installed on the plumbing system to shut-off the home or business from the street sewer.

How a BFP Protects Against Basement Back-Ups



Rainfall overloads sewers – back-ups into basement

BFP stops flow from sewer from entering basement

A BFP can function automatically or be operated manually by the resident. An automatic BFP can be equipped with a battery operated light (much like a smoke alarm) to tell the resident when it is open or closed. To protect, the BFP must be closed during the overload period. This period varies depending on the size of storm, but generally lasts from 2 to 6 hours.

Some of the things to consider when deciding to install a BFP in your home or business include the following:

- ✓ Will someone be home when the protection is needed? This answer may help select between an automatic or manual device.
- ✓ I won't be able to use my plumbing system when the BFP is closed and; I can't have flowing connections (e.g. a sump pump or downspout) discharging upstream of a closed BFP.
- ✓ I should get a quality product – doesn't leak and is easy to maintain.

Alexandria's Program to Assist Homes & Businesses to Protect Against Basement Back-Ups

DECIDING TO INSTALL A BFP: If you decide to install a BFP, we suggest that you consult a plumber licensed by the City and bonded. The plumber can help you determine the most appropriate application and installation arrangement of a BFP for your situation. The owner/plumber will be required to obtain the appropriate permits from the City.

CITY'S BFP ASSISTANCE PROGRAM: The City has instituted a cost reimbursement assistance program for property owners who decide to install BFPs. The program will run for six months. The City will reimburse an owner who qualifies $500 toward cost of a BFP installation. Qualifications for the property owner include the following:

Property must be in designated area (shown on enclosed map)
Property must have a basement
City licensed plumber must install
City must be granted access, if requested, to verify installation
Owner/plumber must have obtained an installation permit
Owner and installer must certify to payment in full
Owner must accept responsibility and release City

APPLYING FOR REIMBURSEMENT: If you decide to install a BFP, use the form attached to this pamphlet to obtain the reimbursement allowance.

For questions call:

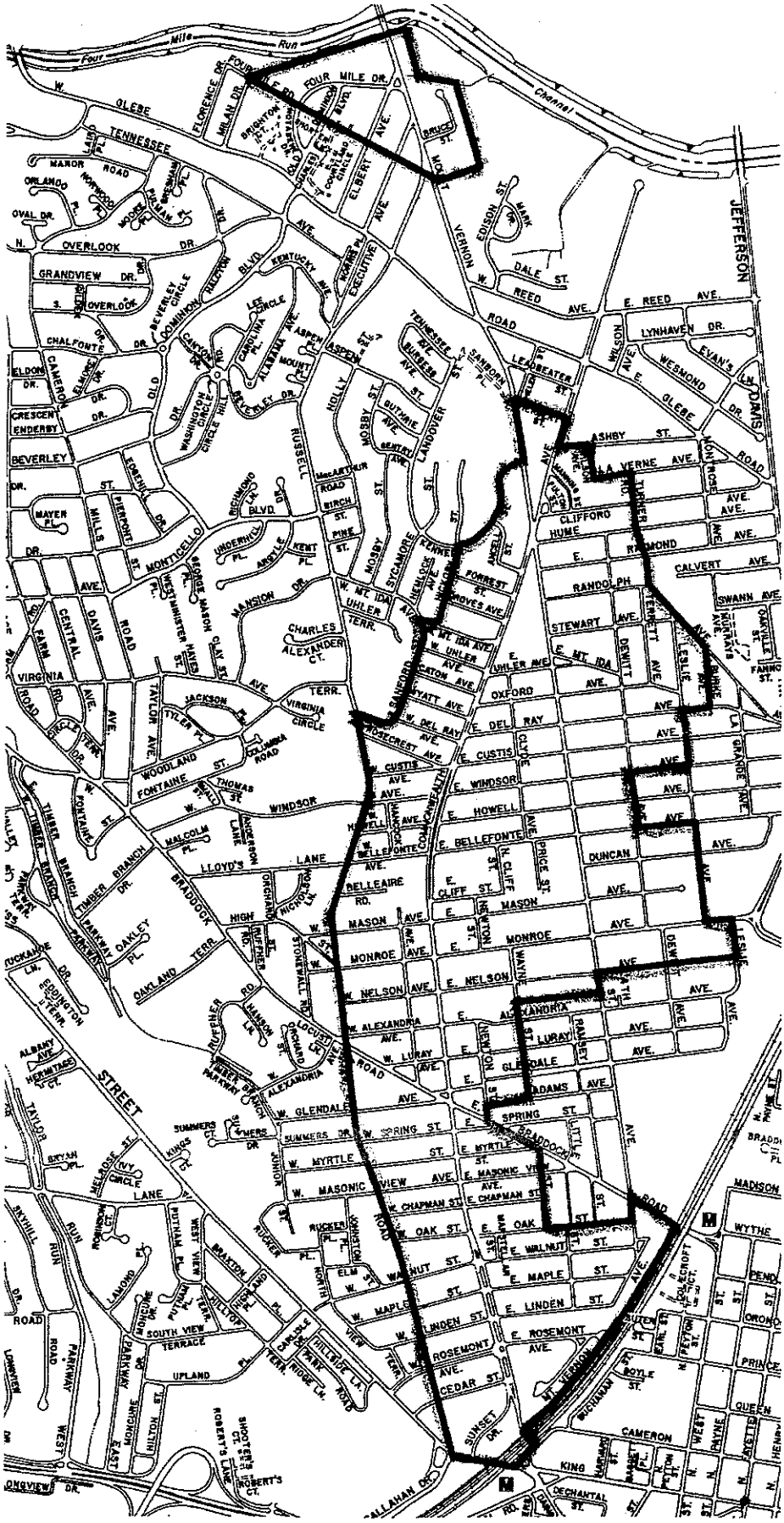
Department of Transportation & Environmental Services, Permit Section

703-838-4324

For information on installation permits call:

Department of Code Enforcement

703-838-4360



City of Alexandria, VA Backflow Preventer (BFP) Assistance Program

DESIGNATED AREA MAP

Boundary of area designated to be eligible for BFP reimbursement program

CITY OF ALEXANDRIA, VIRGINIA
DEPARTMENT OF _____

Request for Cost Reimbursement Allowance for Installation of Backflow Prevention Equipment Pursuant to City Council Resolution _____

PROPERTY OWNER (S)

NAME (S) _____ **DATE** _____

_____

ADDRESS OF PROPERTY _____
Number Street

Alexandria, VA _____
Zip Code

PROPERTY HAS BASEMENT ☐ YES ☐ NO

TOTAL COST PAID FOR INSTALLATION $_____
(Attach paid in full invoice/receipt)

ADDRESS OF OWNER (S) – IF DIFFERENT THAN ABOVE

_____
Number Street

_____
City State Zip Code

INSTALLER

NAME _____ **BUSINESS** _____

ADDRESS _____
Number Street

_____
City State Zip Code

CITY LICENSE NO. _____ **FOR** _____

PERMIT NO. _____ **DATE OBTAINED** _____

PROPERTY OWNER CERTIFICATION AND ACKNOWLEDGMENT

I (we) certify under penalty of law that I (we) have paid in full for the installation of backflow prevention equipment ("equipment") for the above named property. I (we), if requested by the City, will permit the City, upon reasonable notice, to verify that the equipment has been installed prior to paying the reimbursement allowance. I (we) understand that backflow and other types of flooding may still occur, and that the City cannot guarantee that the equipment will prevent such flooding. I (we) acknowledge that the equipment is my (our) property; that I am (we are) fully responsible for its installation, operation and maintenance, and that the City is not responsible for its installation, operation (including any failure to operate) and maintenance. I (we) also agree that this certification and acknowledgment will apply to future owners of the above property, and will disclose this document to future owners.

SIGNED: _____ DATE _____

_____ DATE _____

CERTIFICATION OF INSTALLER

I certify under penalty of law that I have installed backflow prevention equipment at the above listed property on _____, 2003 and have been paid in full for same.

SIGNED: _____ DATE _____

OFFICE USE ONLY

PROPERTY IS IN DESIGNATED AREA ☐ YES ☐ NO

DATE RECEIVED _____

WAS INSTALLATION VERIFIED BY SITE VISIT ☐ YES ☐ NO

REIMBURSEMENT ALLOWANCE APPROVED ☐ BY _____

REIMBURSEMENT ALLOWANCE NOT APPROVED ☐ BY _____

REASON FOR DISAPPROVAL _____

_____

WAS APPLICANT SENT NOTICE AND REASONS FOR DISAPPROVAL ☐ YES ☐ NO

DATE NOTICE SENT _____ BY _____

Attach copy of disapproval notice to application.

APPROVAL DATE _____ CHECK NO. _____

AMOUNT OF CHECK _____ DATE SENT _____

16

4-8-03

Beverly I Jett

04/08/2003 04:16 PM

To: Rich Baier/Alex@Alex
cc: Barbara L Carter/Alex@Alex
Subject: RE: Docket Item #16

fyi

----- Forwarded by Beverly I Jett/Alex on 04/08/03 04:22 PM -----

"Marguerite Lang" <marguerite@turcopolier.com>

04/08/03 02:57 PM

To: <mayoralx@aol.com>, <billclev@comcast.net>, <eberweincouncil@comcast.net>, <DSpeck@aol.com>, <beverly.jett@ci.alexandria.va.us>, <wmeuille@wdeuille.com>, <DELPepper@aol.com>, <council@joycewoodson.net>
cc:
Subject: RE: Docket Item #16

Dear Mr. Mayor and Members of City Council,

Please approve the cost-sharing program for the installation of back-flow preventors for areas within the Four Mild Run and Commonwealth sewer service areas.

Many families in our community suffered from the back-flow problems that occurred during the heavy rainfall of February 22nd. Some lost computers and other valuable items in their basements due to this problem and therefore incurred financial losses. Preventors would help greatly in preventing future problems.

Thank you for your consideration,

Marguerite L Lang
14 West Rosemont Avenue

16
4-8-03

Beverly I Jett
04/08/2003 04:20 PM

To: Rich Baier/Alex@Alex
cc: Barbara L Carter/Alex@Alex
Subject: Sewer Overflow Problems in Rosemont

----- Forwarded by Beverly I Jett/Alex on 04/08/03 04:26 PM -----

"David Nichols" <DNICHOLS@bakerd.com>
04/08/03 03:47 PM

To: <delpepper@aol.com>, <dspeck@aol.com>, <mayoralx@aol.com>, <billclev@comcast.net>, <eberweincouncil@comcast.net>, <council@joycewoodson.net>, <wmeuille@wdeuille.com>
cc: <beverly.jett@ci.alexandria.va.us>, <janise.nichols@gsa.gov>
Subject: Sewer Overflow Problems in Rosemont

Mayor Donley, Vice Mayor Cleveland and Respected Council Members,

I understand you are considering issues associated with some of the basement flooding that took place during the President's Day Storm. I probably sit in a unique position from some of my neighbors given my position as an appointed board member on the Alexandria Sanitation Authority. This results in knowing more about waste water disposal than I ever thought was possible.

Unfortunately, some of that knowledge is in how to remove the water coming up from the drain in my basement at 5 W. Masonic View Ave. During the last great flood (98 I think) the city sewer lines backed up into my basement, and the city (as I understand it from the previous owner) installed a backflow valve in my basement. Unfortunately, the valve, in perfect working order, is not very reliable and did not work during the most recent storm.

Unless the technology has changed, providing reimbursement for these valves is a waste of money and gives the homeowner a false sense of security. I'm content knowing that everything in my basement will always be up on blocks, but from my perspective the city should focus on two key issues.

1) Enlarging the sewer system pipes so that they have the capacity to handle wet weather flow (particularly where they make the turn on Commonwealth Ave to head towards the Sanitation Authority; and

2) Investigating and fixing why the sewer system overflows when it rains (more people don't flush their toilets in the rain). We need to fix inflow problems (cracks in pipes, gutters connected to the sewer system etc.) Let me give you one quick example. The pipe connecting my house to the city sewer line in the middle of Masonic View is the original terra cotta pipe. This pipe has a seam every two feet where water flows in every time it rains. This is probably true for most of the houses in Rosemont and Del-Ray. As a result it's a major source of rainwater into the sewer system. Why not consider providing reimbursement assistance or covering the cost to slip-line these house connectors, thus stopping a major source of in-flow.

I know you are very busy and appreciate your assistance and willingness to consider solving these problems.

David Nichols
5 W. Masonic View Ave
Alexandria, VA 22301
(703) 683-3669

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If you received this message in error, please notify the sender by reply
e-mail and delete the message immediately.

16
4-8-03

<Verenda@aol.com>

04/08/03 05:27 PM

To: <mayoralx@aol.com>, <billclev@comcast.net>, <eberweincouncil@comcast.net>, <wmeuille@wdeuille.com>, <delpepper@aol.com>, <dspeck@aol.com>, <council@joycewoodson.net>, <beverly.jett@ci.alexandria.va.us>

cc:

Subject: Yes to backflow

Excellent idea that would do much to protect the value of our neighborhood. I would be happy to pay part of the cost but couldn't possibly handle all of it. Equally important, more of my neighbors could take advantage, and everyone benefits when a neighborhood is perceived as being "free of backflowing sewage."

Verenda Camire
113 East Luray Ave.
Alexandria, VA 22301
703-549-6309
verenda@aol.com